

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (canceled).
- 1 2. (currently amended): A system according to Claim [[1]] 4, further
2 comprising:
3 a concat [[path]] tree interconnecting the packet validation devices, the
4 tree nodes, and the root tree node via an interconnection reserved for validation
5 rule parameter exchange.
- 1 3. (currently amended): A system according to Claim [[1]] 4, further
2 comprising:
3 a dissemination path interconnecting the root tree node with each packet
4 validation device via [[a]] an interconnection reserved for validation rule
5 parameter exchange.
- 1 4. (currently amended): A system ~~according to Claim 1, further for~~
2 dynamically configuring parameterized validation rules in a distributed computing
3 environment, comprising:
4 a plurality of packet validation devices, each situated within the
5 distributed computing environment at packet routing points and validating packet
6 traffic using parameterized validation rules;
7 a plurality of hierarchical tree nodes structured into a plurality of tiered
8 layers with each tree node interfaced to at least one other tree node, those tree
9 nodes at a lowermost layer further interfaced to at least one packet validation
10 device from which validation rule parameters are retrieved and processed;

11 a root tree node interfaced to an uppermost layer of tree nodes from which
12 validation rule parameters are retrieved and disseminated to each of the packet
13 validation devices; and

14 a filter executed by each tree node on retrieved validation rule parameters
15 to remove at least one of duplicate validation rule parameters and validation rule
16 parameters sharing commonly identified network address space.

1 5. (currently amended): A system according to Claim [[1]] 4, wherein
2 the validation rule parameters each comprise a source network address and subnet
3 mask, a source network port, a destination network address and subnet mask, a
4 destination network port, and one or more network protocol identifiers.

1 6. (canceled).

1 7. (currently amended): A method according to Claim [[6]] 9, further
2 comprising:

3 interconnecting a [[path]] tree between the packet validation devices, the
4 tree nodes, and the root tree node via an interconnection reserved for validation
5 rule parameter exchange.

1 8. (currently amended): A method according to Claim [[6]] 9, further
2 comprising:

3 interconnecting a dissemination path between the root tree node and each
4 packet validation device via [[a]] an interconnection reserved for validation rule
5 parameter exchange.

1 9. (currently amended): A method ~~according to Claim 6, further~~ for
2 dynamically configuring parameterized validation rules in a distributed computing
3 environment, comprising:

4 fielding a plurality of packet validation devices, each situated within the
5 distributed computing environment at packet routing points and validating packet
6 traffic using parameterized validation rules;

7 interconnecting a plurality of hierarchical tree nodes structured into a
8 plurality of tiered layers with each tree node interfaced to at least one other tree
9 node, those tree nodes at a lowermost layer further interfaced to at least one
10 packet validation device from which validation rule parameters are retrieved and
11 processed;
12 interfacing a root tree node to an uppermost layer of tree nodes from
13 which validation rule parameters are retrieved and disseminated to each of the
14 packet validation devices; and
15 executing a filter by each tree node on retrieved validation rule parameters
16 to remove at least one of duplicate validation rule parameters and validation rule
17 parameters sharing commonly identified network address space.

1 10. (currently amended): A method according to Claim [[6]] 9,
2 wherein the validation rule parameters each comprise a source network address
3 and subnet mask, a source network port, a destination network address and subnet
4 mask, a destination network port, and one or more network protocol identifiers.

1 11. (currently amended): A computer-readable storage medium
2 holding code for performing the method of Claim [[6]] 9.

1 12. (original): A system for communicating coalesced rule parameters
2 in a distributed computing environment, comprising:
3 a plurality of packet validation devices communicatively interposed
4 between network routing points within the distributed computing environment
5 and applying parameterized rules to transiting network packet traffic;
6 a plurality of processing tree nodes configured into a concast tree,
7 comprising:
8 in a lowermost layer of the concast tree, each processing tree node
9 collecting and coalescing rule parameters from at least one packet validation
10 device; and

11 in each successive layer of the concast tree, each processing tree
12 node collecting and coalescing the rule parameters from at least one processing
13 tree node in a next lower layer of the concast tree;
14 a control center assembling the coalesced rule parameters from each
15 packet validation device in an uppermost layer of the concast tree; and
16 a dissemination path forwarding the coalesced rule parameters from the
17 control center to each packet validation device.

1 13. (original): A system according to Claim 12, wherein each
2 processing tree node further comprises:
3 a parameter filter removing duplicate rule parameters and consolidating
4 commonly identified network address space.

1 14. (original): A system according to Claim 12, wherein each packet
2 validation device further comprises:
3 a rule filter limiting application of the coalesced rule parameters to those
4 network routing points within a pre-determined vicinity.

1 15. (original): A system according to Claim 12, wherein the
2 dissemination path further comprises:
3 the distributed computing environment through which the coalesced rule
4 parameters are broadcast to each packet validation device.

1 16. (original): A system according to Claim 12, wherein the
2 dissemination path further comprises:
3 the concast tree through which the coalesced rule parameters are sent to
4 each packet validation device via the processing tree nodes.

1 17. (original): A system according to Claim 12, wherein the concast
2 tree further comprises:
3 an in-band communication channel logically defined via bandwidth
4 reserved within the distributed computing environment.

1 18. (original): A system according to Claim 12, wherein the concast
2 tree further comprises:
3 an out-of-band communication channel interfacing the packet validation
4 devices, the processing tree nodes, and the control center via interconnections
5 peripheral to the distributed computing environment.

1 19. (original): A system according to Claim 12, wherein the rule
2 parameters each comprise:
3 source packet information describing a source network address and subnet
4 mask;
5 source port information describing a source network port;
6 destination packet information describing a destination network address
7 and subnet mask;
8 destination port information describing a destination network port; and
9 network protocol information identifying one or more network protocols.

1 20. (original): A system according to Claim 12, wherein the distributed
2 computing environment comprises an internet-protocol (IP)-based network.

1 21. (original): A method for communicating coalesced rule parameters
2 in a distributed computing environment, comprising:
3 applying parameterized rules to network packet traffic transiting a
4 plurality of packet validation devices communicatively interposed between
5 network routing points within the distributed computing environment;
6 configuring a plurality of processing tree nodes into a concast tree,
7 comprising:
8 collecting and coalescing rule parameters from at least one packet
9 validation device into a processing tree node in a lowermost layer of the concast
10 tree; and

11 collecting and coalescing the rule parameters from at least one
12 processing tree node in a next lower layer of the concast tree in each successive
13 layer of the concast tree;
14 assembling the coalesced rule parameters from each packet validation
15 device in an uppermost layer of the concast tree into a control center and
16 forwarding the assembled coalesced rule parameters to each packet validation
17 device.

1 22. (original): A method according to Claim 21, further comprising:
2 removing duplicate rule parameters and consolidating commonly
3 identified network address space.

1 23. (original): A method according to Claim 21, further comprising
2 limiting application of the coalesced rule parameters to those network
3 routing points within a pre-determined vicinity.

1 24. (original): A method according to Claim 21, further comprising:
2 broadcasting the assembled coalesced rule parameters through the
3 distributed computing environment to each packet validation device.

1 25. (original): A method according to Claim 21, further comprising:
2 sending the assembled coalesced rule parameters to each packet validation
3 device through the concast tree via the processing tree nodes.

1 26. (original): A method according to Claim 21, further comprising:
2 logically defining an in-band communication channel by reserving
3 bandwidth within the distributed computing environment.

1 27. (original): A method according to Claim 21, wherein the concast
2 tree further comprises:
3 interfacing the packet validation devices, the processing tree nodes, and
4 the control center via an out-of-band communication channel using
5 interconnections peripheral to the distributed computing environment.

1 28. (original): A method according to Claim 21, wherein the rule
2 parameters each comprise:
3 source packet information describing a source network address and subnet
4 mask;
5 source port information describing a source network port;
6 destination packet information describing a destination network address
7 and subnet mask;
8 destination port information describing a destination network port; and
9 network protocol information identifying one or more network protocols.

1 29. (original): A method according to Claim 21, wherein the
2 distributed computing environment comprises an internet-protocol (IP)-based
3 network.

1 30. (original): A computer-readable storage medium holding code for
2 performing the method of Claim 21.